DC:

Care & Use of the Multimeter

Unclassified:

2 Hour Conference, W/ 2Hr. P/E1

Safety & Environmental Impact; “LOW”.

Terminal Learning Objective

ACTION:

Measure DC and AC voltage, DC and AC current, and resistance using a digital Multimeter.

CONDITION:

Given a classroom environment, workstation, NIDA 130A or E trainer, Digital Multimeter w/test leads, PC-130; 1B, 2, 3, & 4 circuit cards, and official OMEMS reference materials.

STANDARD:

Measure W/a digital Multimeter DC & AC voltage, current, & resistance. Correctly Answer 7 of 10 & 8 of 10 for EOD questions.

Introduction

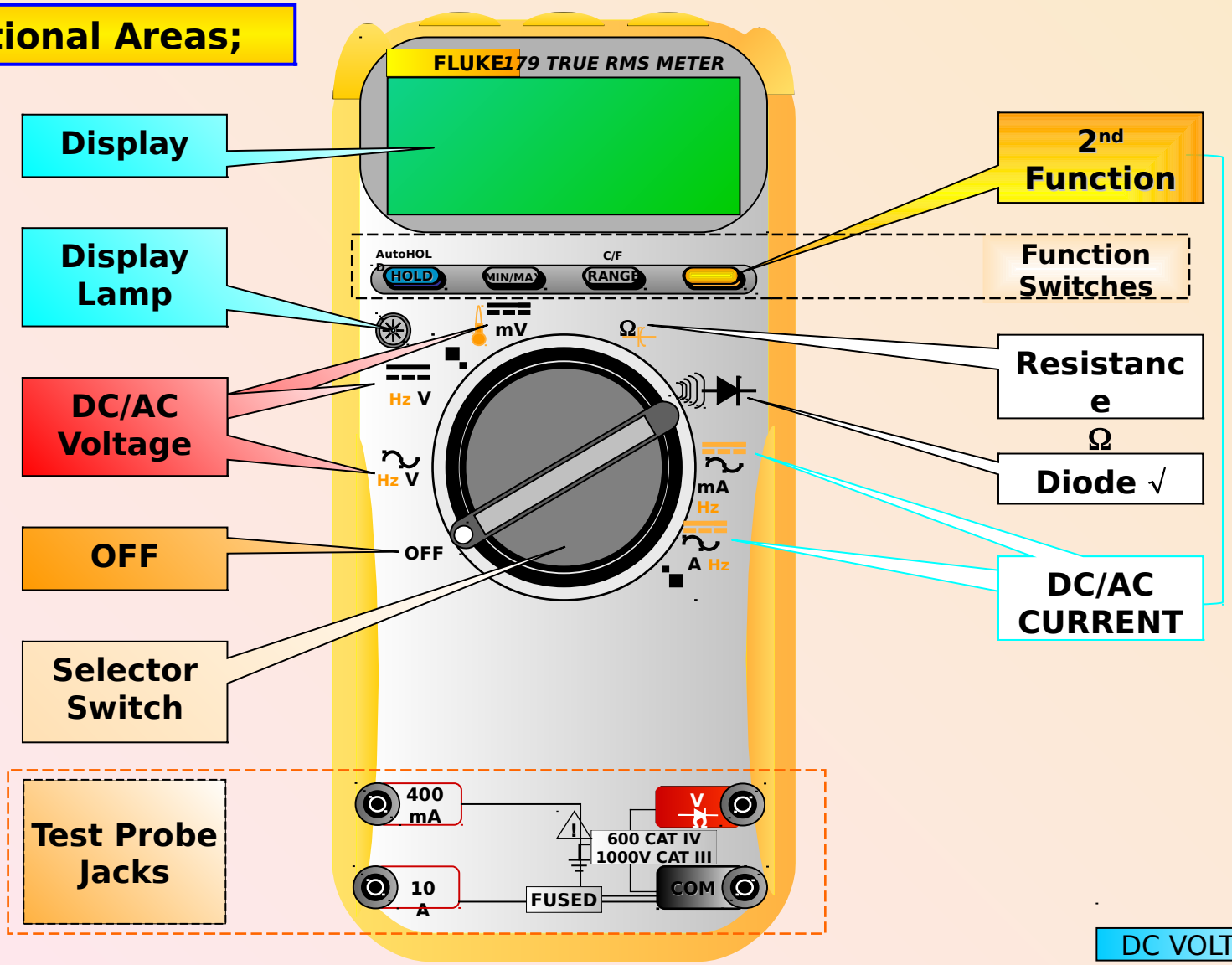
You have probably used some type of meter in the past; the speedometer on your bicycle or automobile.

Electronic technicians use a meter called the multi-meter. This Instrument enables the technician to measure units of voltage, current & resistance to diagnose malfunctions.

Functional Areas

DC: Care & Use Multimeter

Functional Areas;



DC VOLTAGE

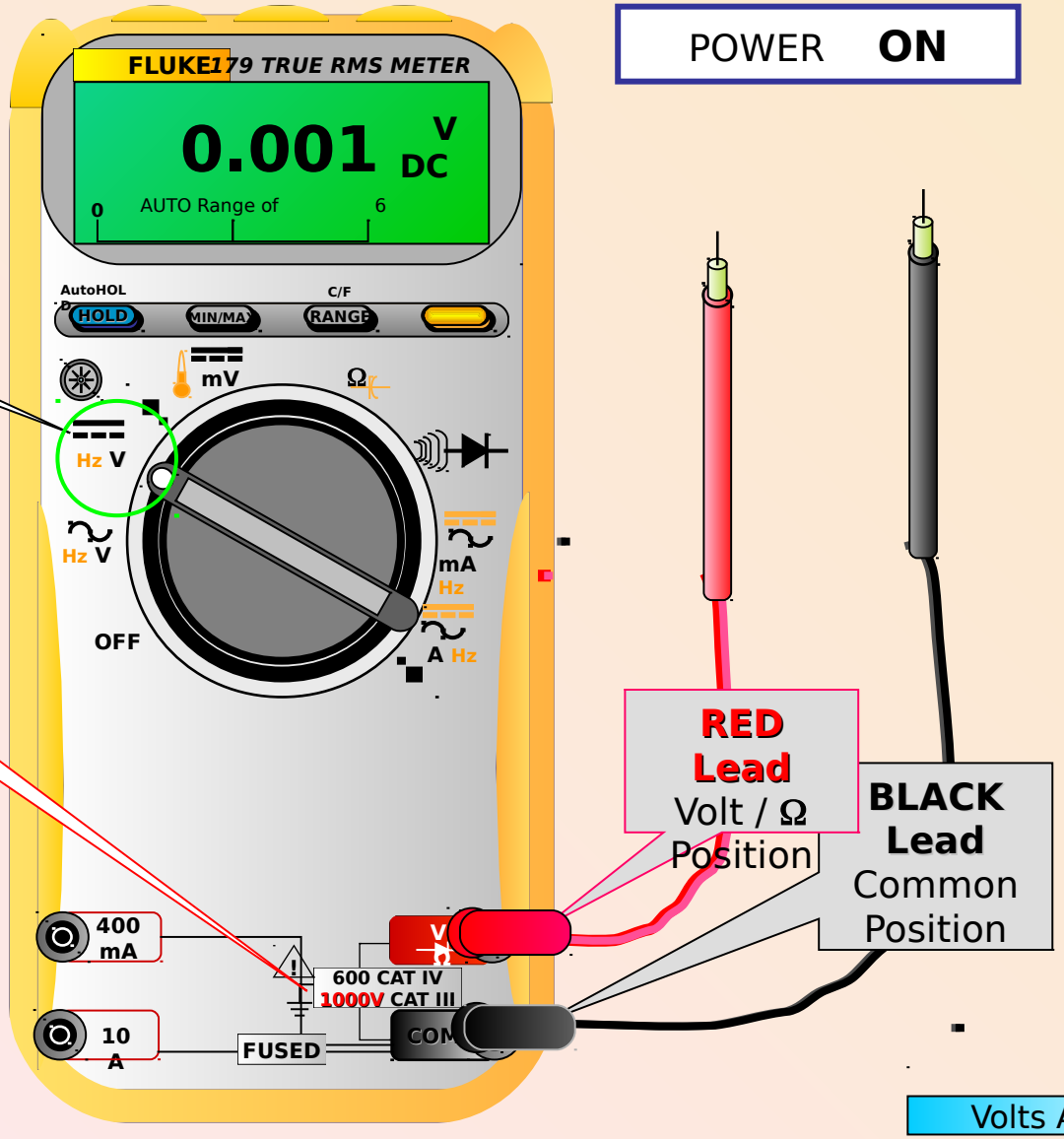
DC: Care & Use Multimeter

DC VOLTAGE;

POWER **ON**

DC Voltage

1000 DC Maximum



Volts AC

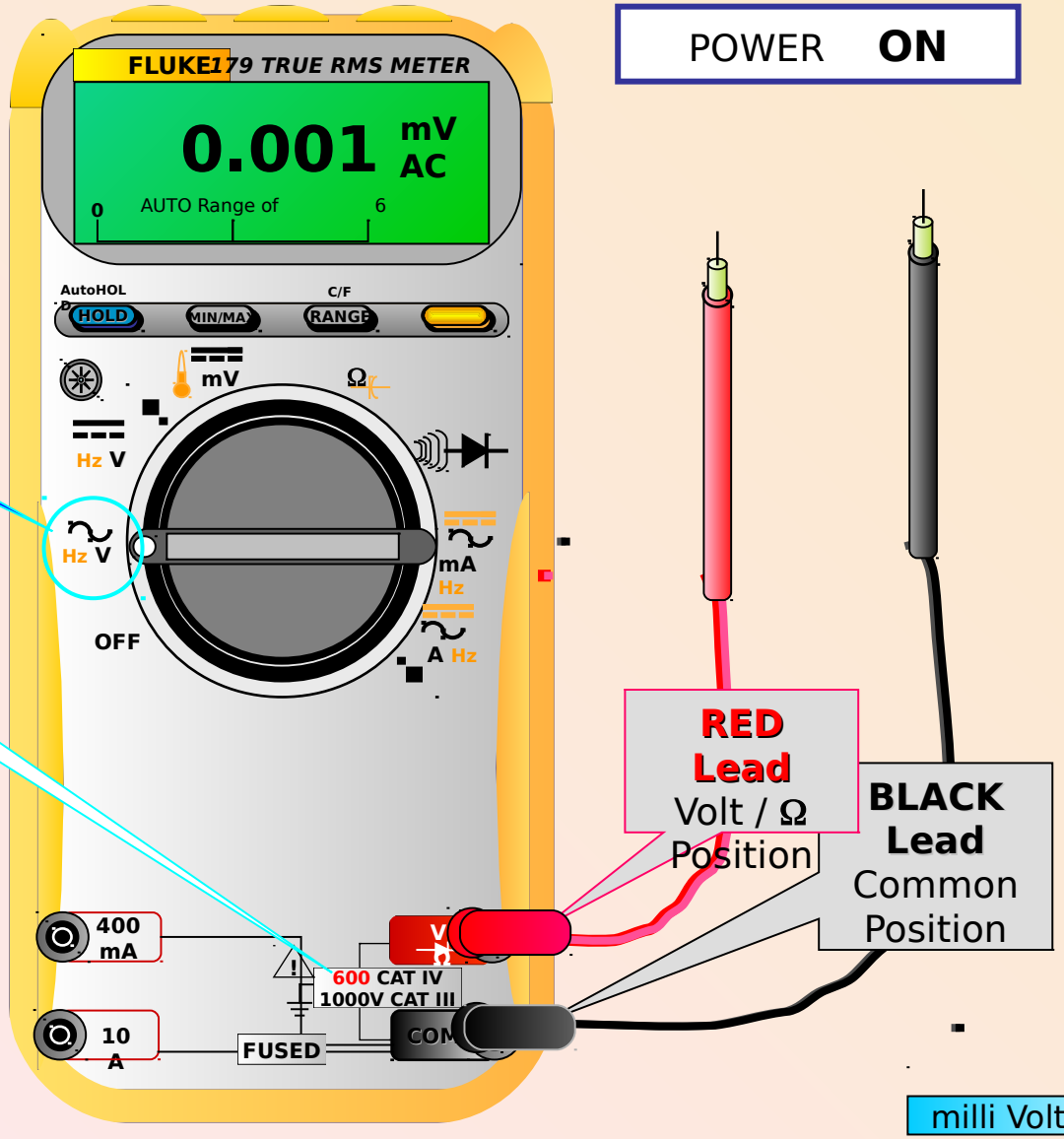
DC: Care & Use Multimeter

AC VOLTAGE;

POWER **ON**

AC Voltage

600 VAC Maximum



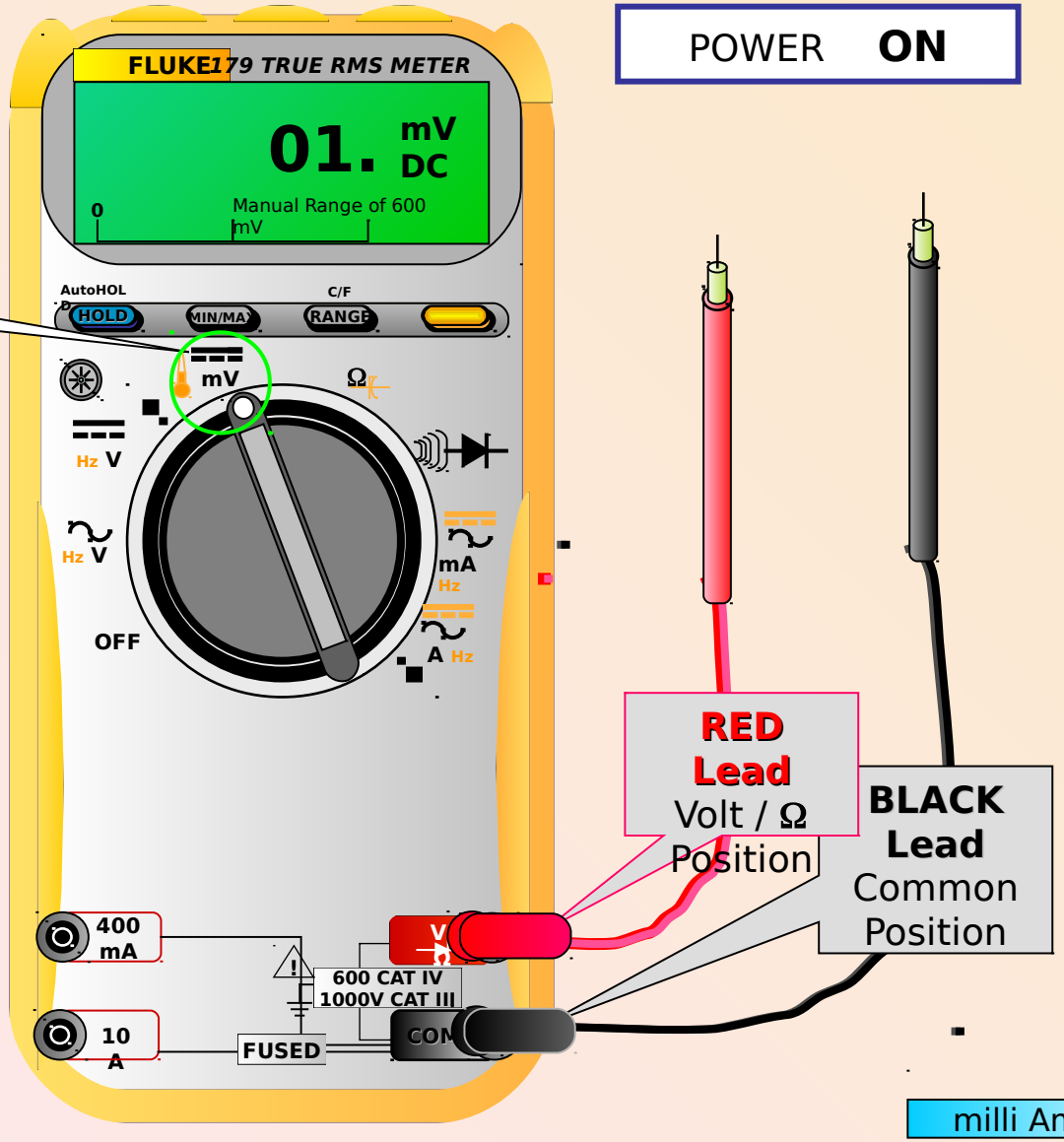
milli Volts DC

DC: Care & Use Multimeter

DC VOLTAGE; milli Volts.

POWER **ON**

DC milli-Volts (mV)



milli Amps

DC: Care & Use Multimeter

DC CURRENT; milli Amps.

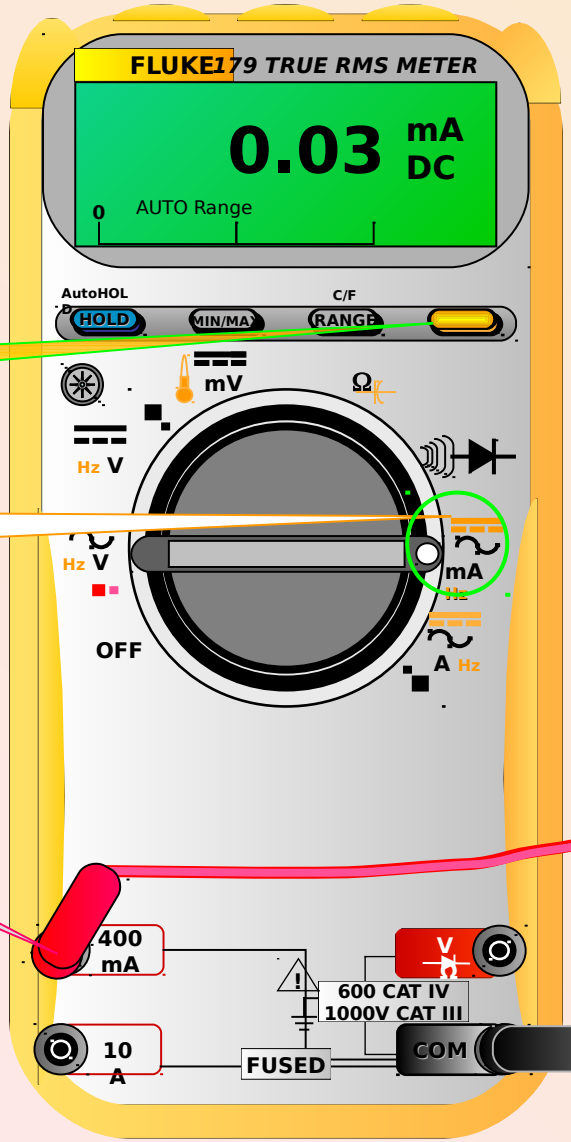
POWER **ON**

2nd Function

DC milli-Amps (mA)

RED Lead mA Position

BLACK Lead Common Position



AMPs

DC: Care & Use Multimeter

DC CURRENT; Amps.

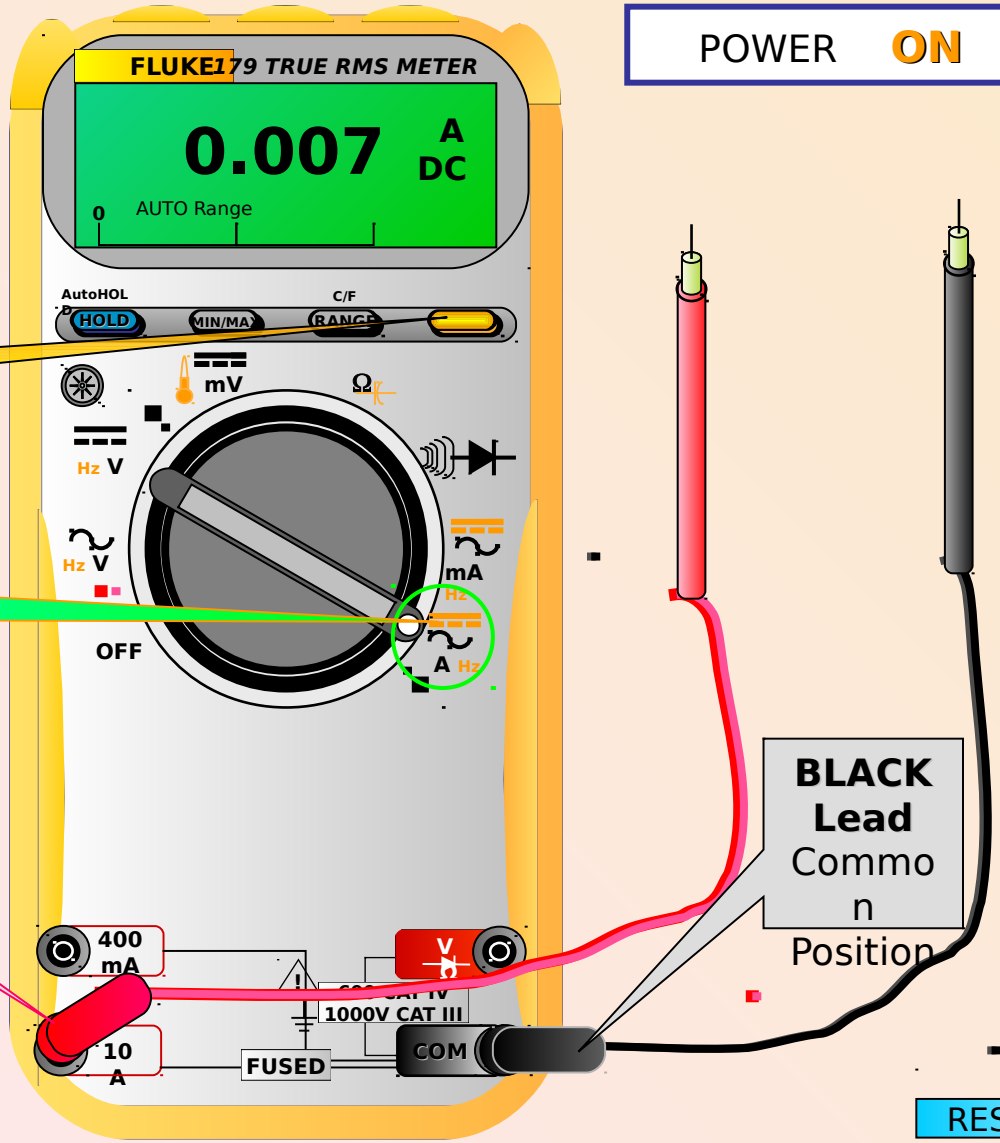
POWER **ON**

2nd Function

DC Amps (A)

RED Lead 10 Amp Position

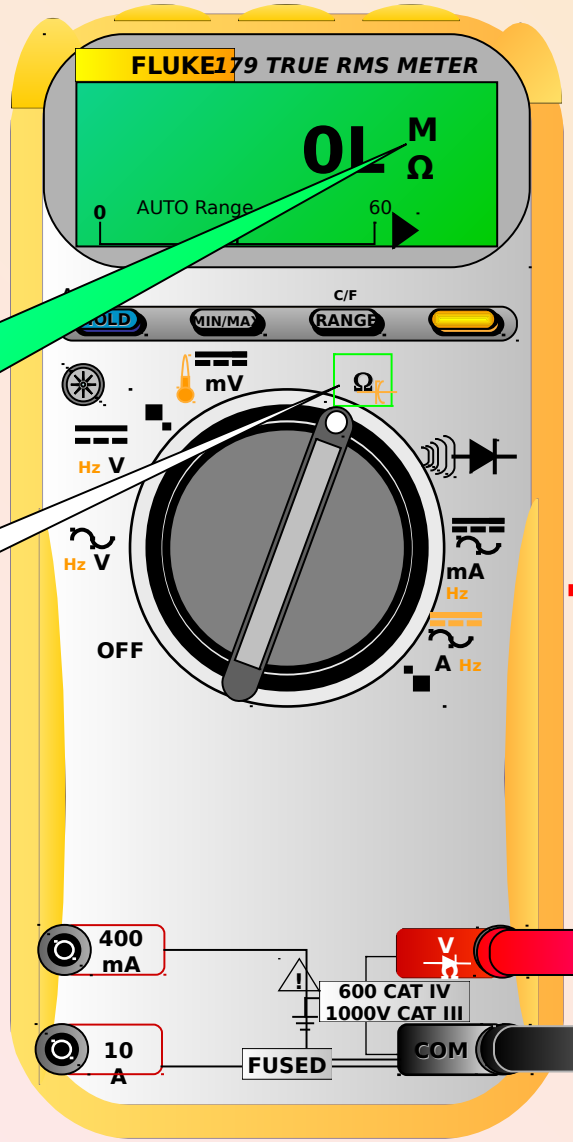
BLACK Lead Common Position



RESISTANCE

DC: Care & Use Multimeter

DC RESISTANCE;
Ω, OHMs.



POWER **OFF**

Mega Ohms
MΩ or
Kilo Ohms KΩ
OL Overload

or ∞

Ω

RED Lead
Volt / Ω
Position

BLACK Lead
Common
Position

CHALLENGE

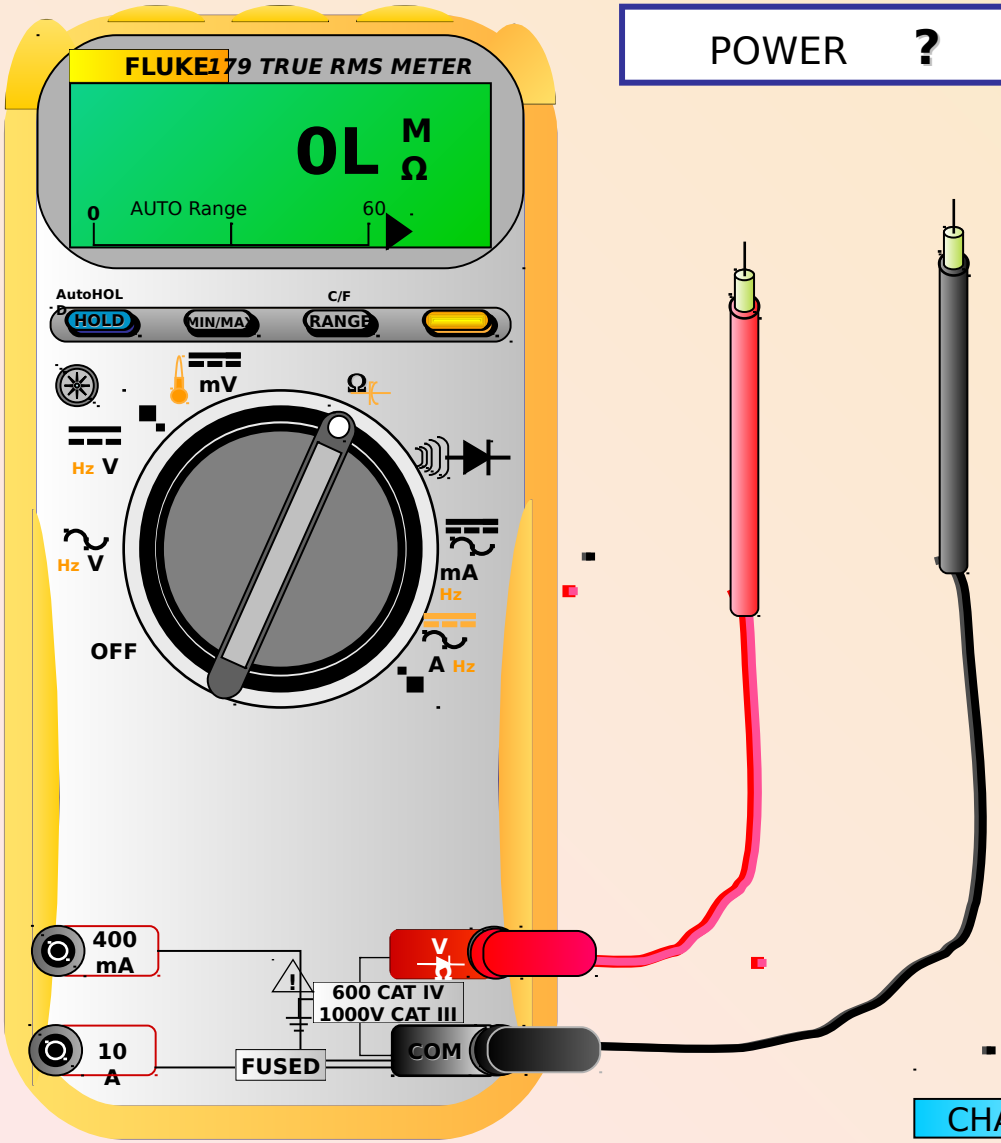
DC: Care & Use Multimeter

CHALLENGE;
The DMM is set to measure What ?

Voltage

Current

Resistance



POWER ?

CHALLENGE

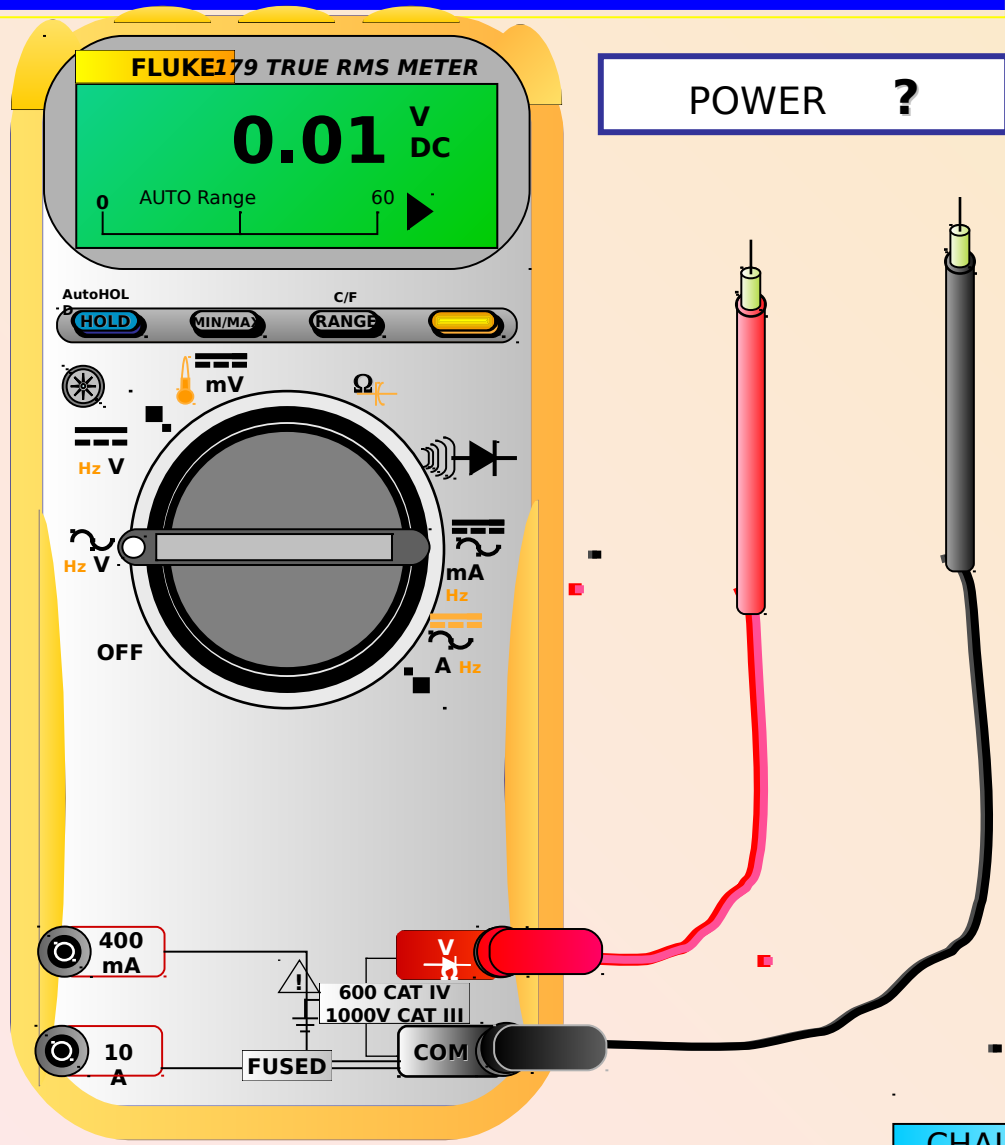
DC: Care & Use Multimeter

CHALLENGE;
The DMM is set to measure What ?

Voltage

Current

Resistance



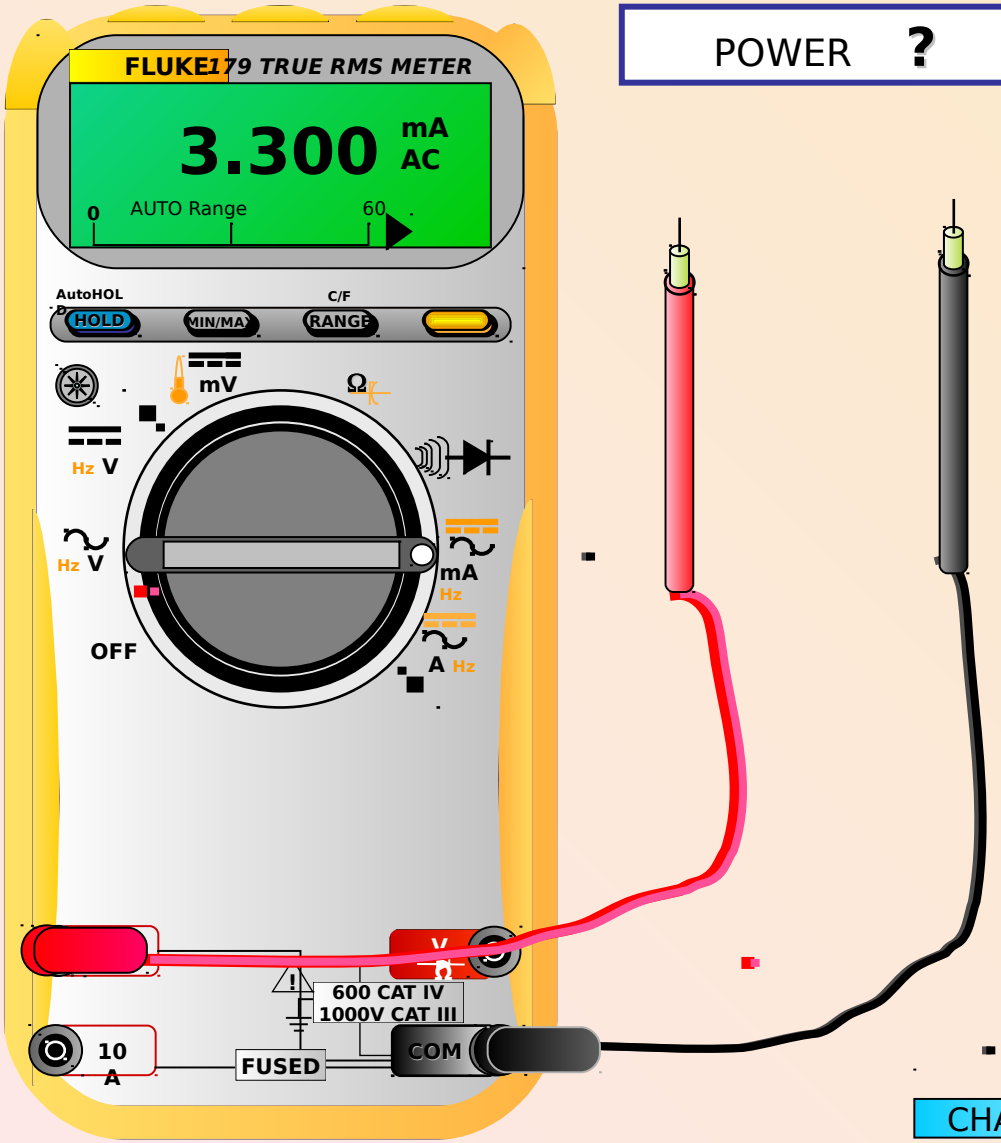
POWER ?

CHALLENGE

DC: Care & Use Multimeter

CHALLENGE;
The DMM is set to measure What ?

- Voltage
- Current
- Resistance



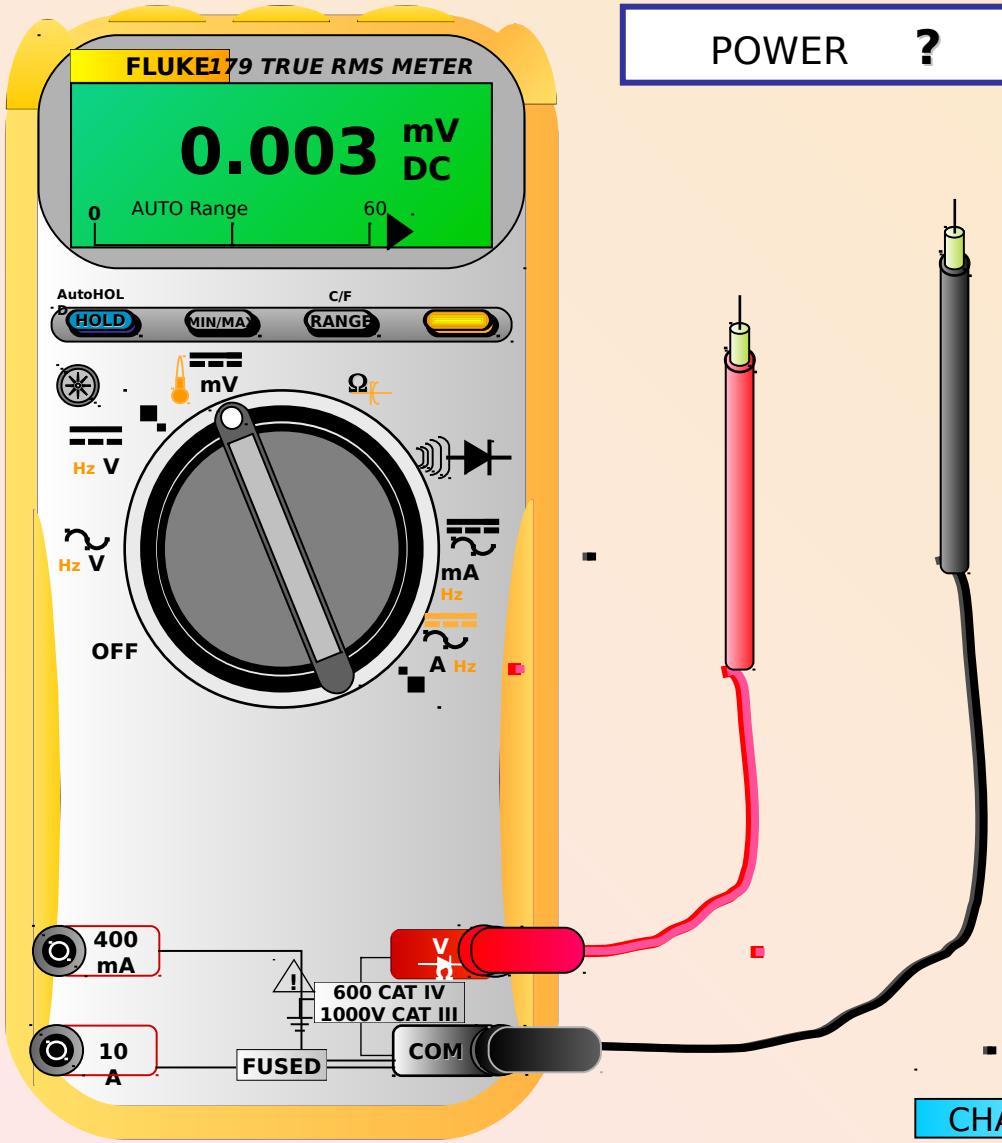
POWER ?

CHALLENGE

DC: Care & Use Multimeter

CHALLENGE;
The DMM is set up to measure What ?

- Voltage
- Current
- Resistance



POWER ?

CHALLENGE

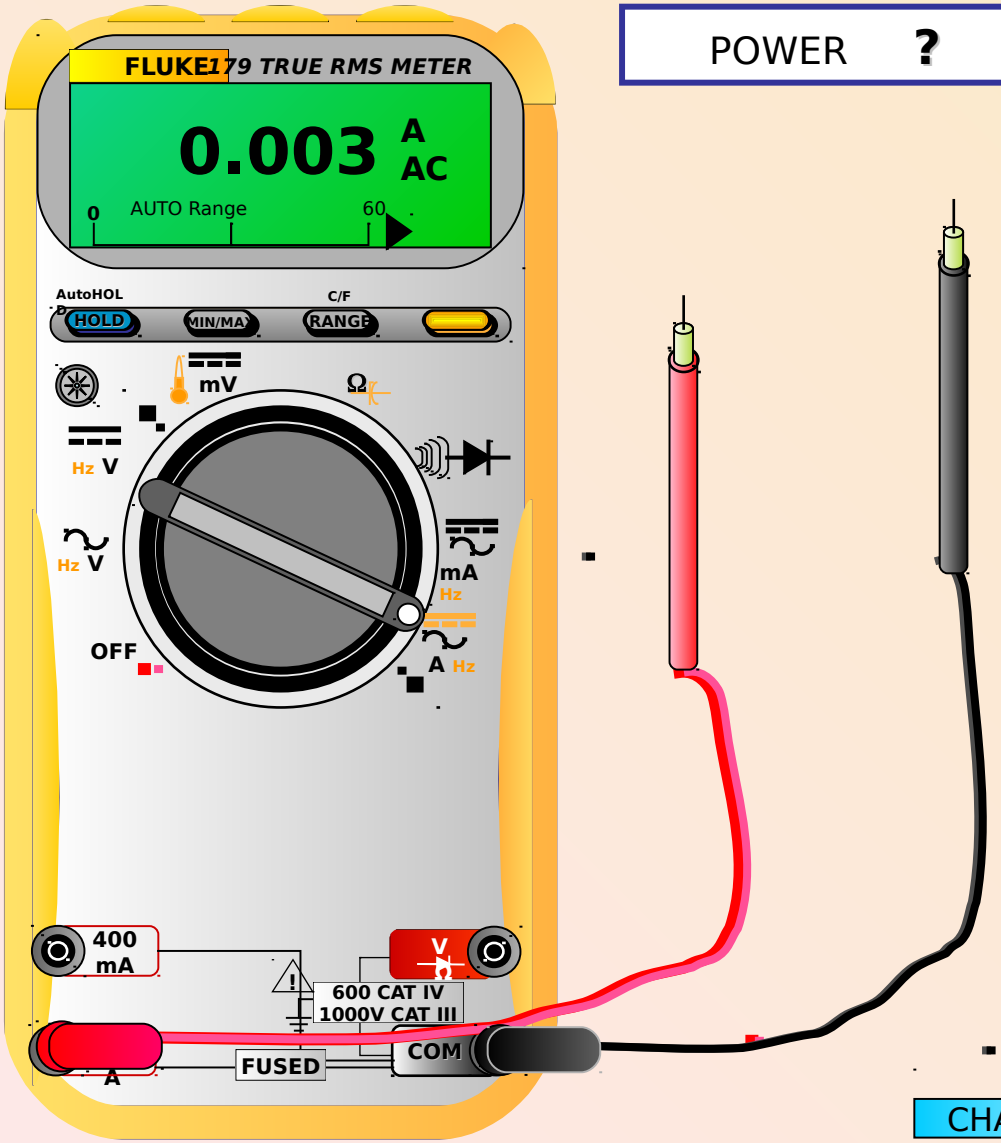
DC: Care & Use Multimeter

CHALLENGE;
The DMM is set up to measure What ?

Voltage

Current

Resistance



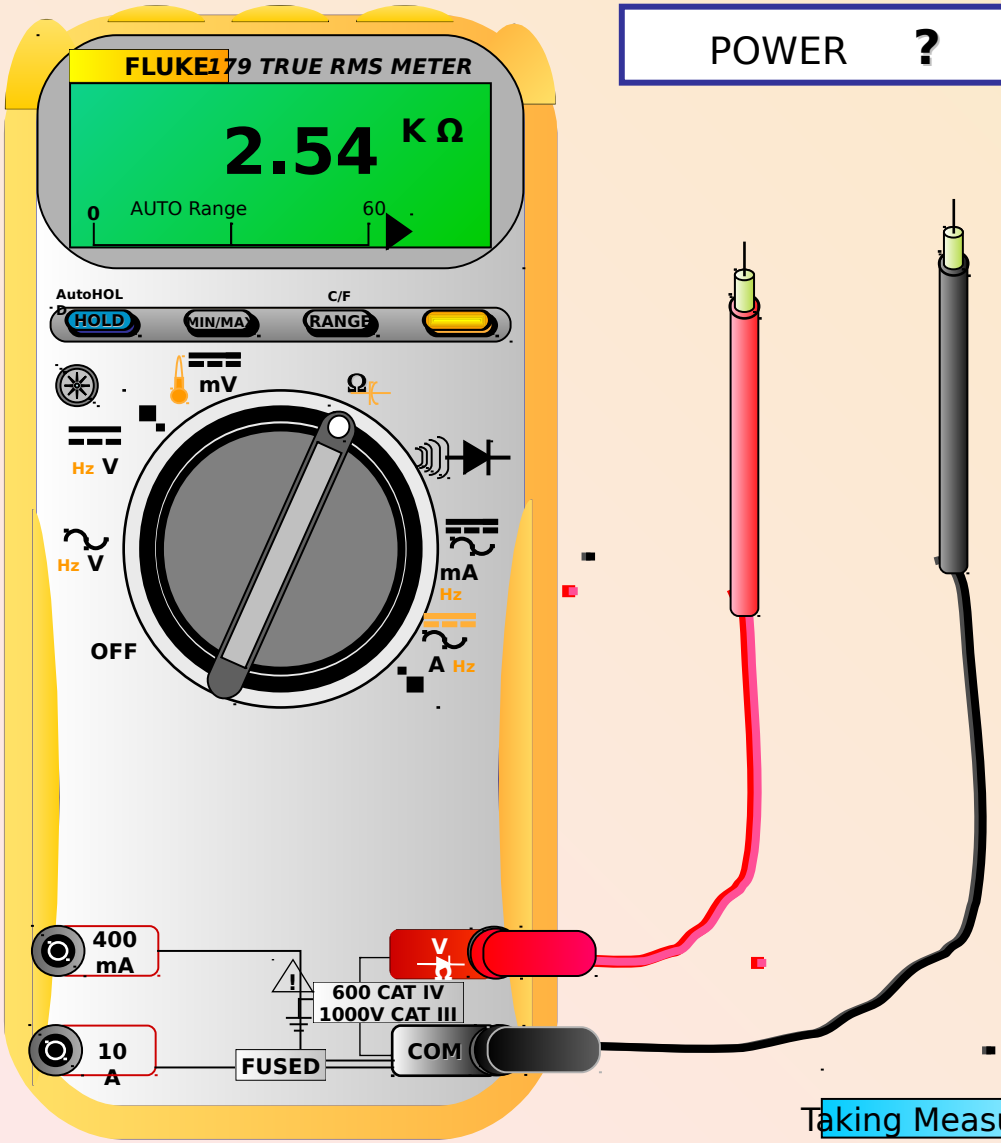
POWER ?

CHALLENGE

DC: Care & Use Multimeter

CHALLENGE;
The DMM is set up to measure What ?

- Voltage
- Current
- Resistance



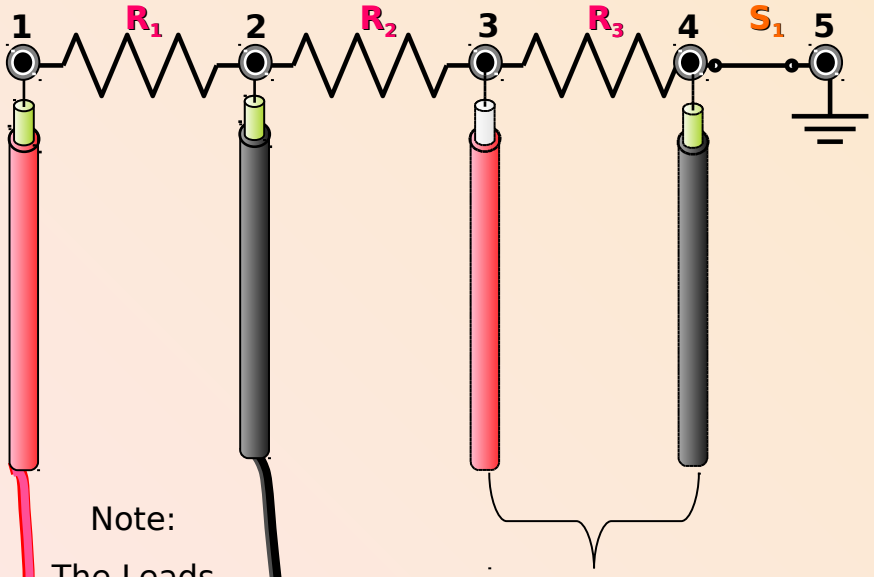
POWER ?

Taking Measurements R

DC: Care & Use Multimeter

Taking Measurements; RESISTANCE.

POWER **OFF**



Note:

The Leads Bracket the Resistor for the measurement being taken.

?

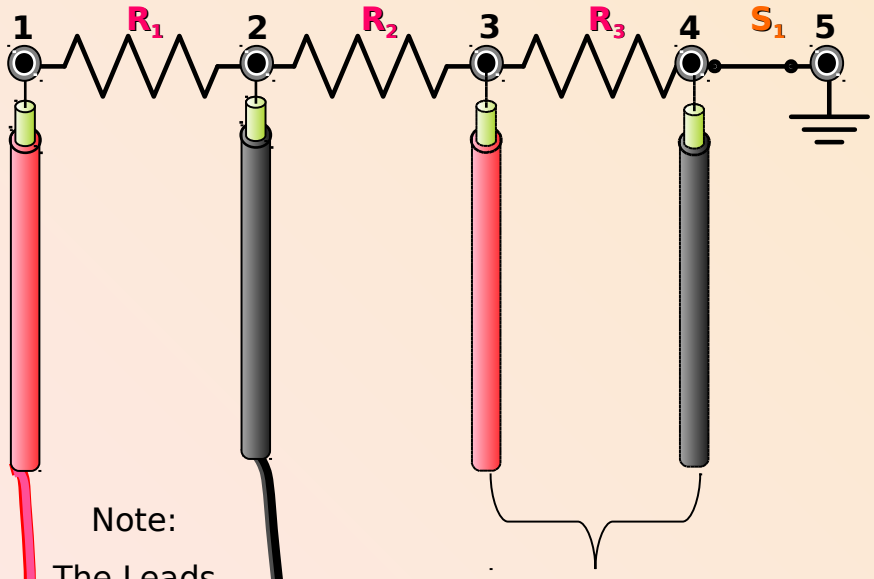
Which Resistor is A Measurement being taken.

Measurements **V**

DC: Care & Use Multimeter

Taking Measurements; VOLTAGE.

POWER **ON**



Note:

The Leads Bracket the Resistor for the measurement being taken.

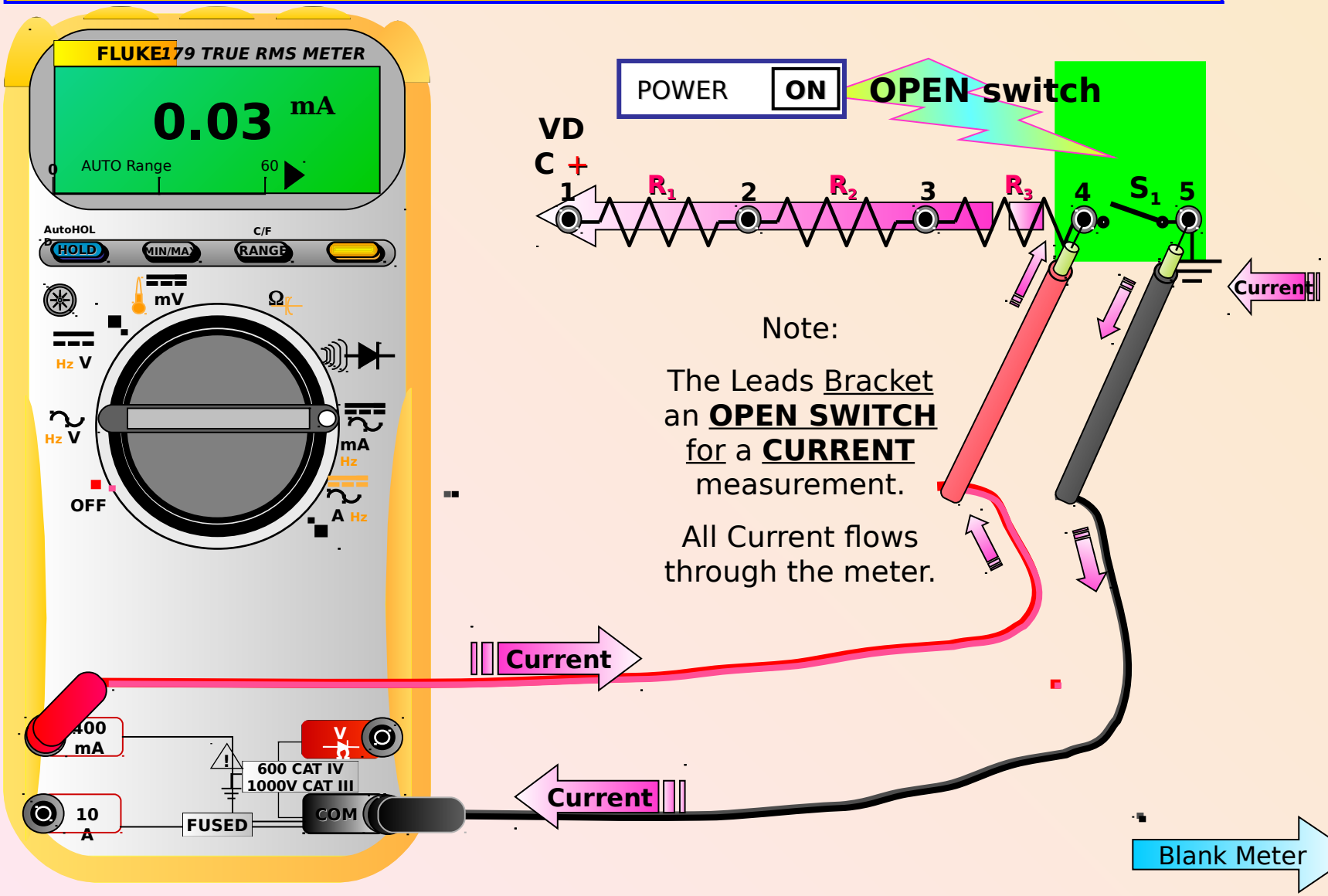
NOTE

The black lead is orientated toward Ground

Current

DC: Care & Use Multimeter

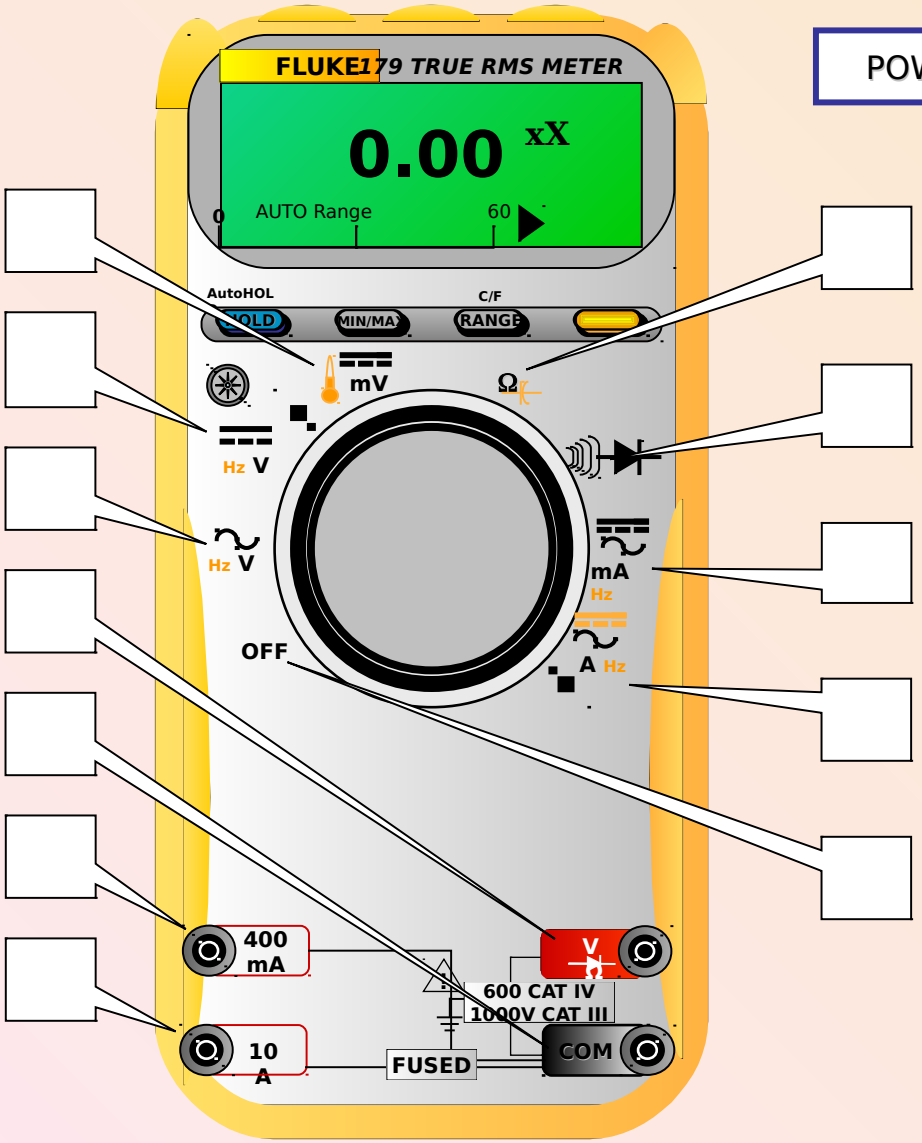
Taking Measurements; CURRENT.

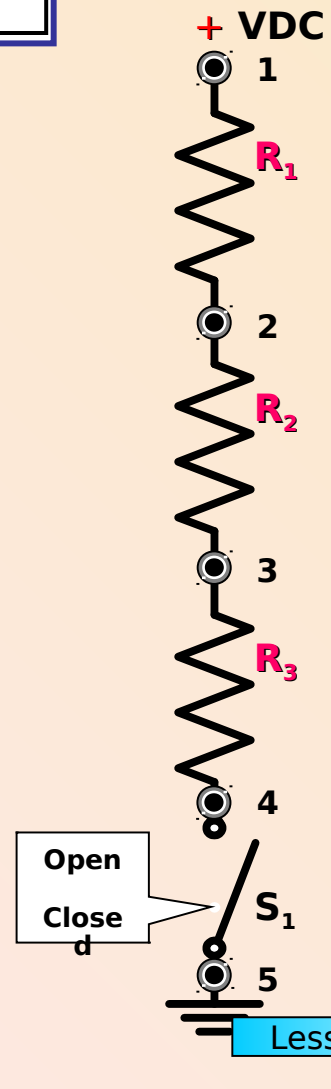


Blank Meter

DC: Care & Use Multimeter

Taking Measurements;

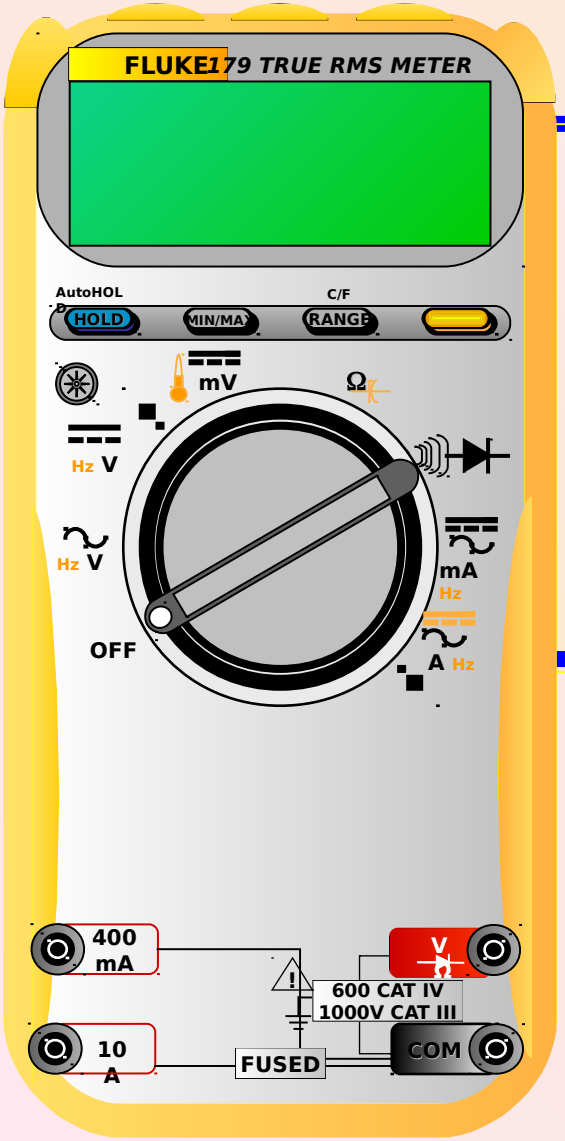




Lesson Test

DC: Care & Use Multimeter

SUMMARY & QUESTIONS:



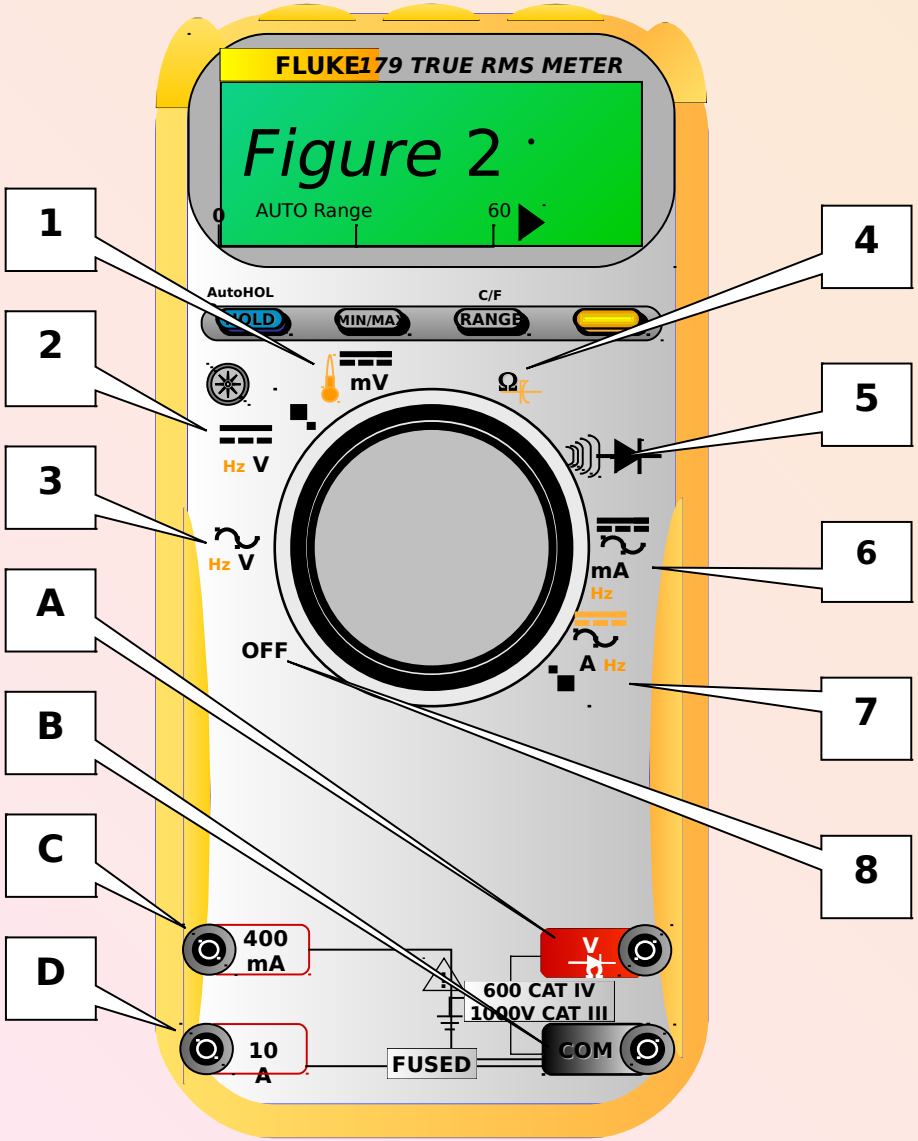
LESSON TEST:

Time;	**20 Minutes.**
References;	**Without.**
Standard;	**70% or 7 of 10 questions answered correctly. 80% for EOD.**

Test Schematic

DC: Care & Use Multimeter

Lesson Test 1 & 2:



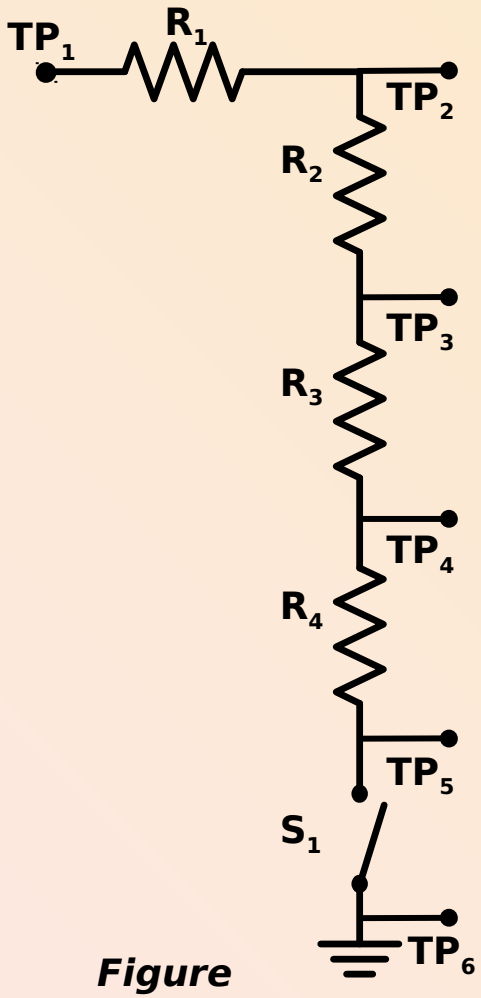


Figure 1.